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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,431	02/04/2002	Jeffrey Peter Allen	05046-00017	8300

22910 7590 10/22/2003

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BOSTON, MA 02109-9601

EXAMINER
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YUAN, DAH WEI D

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

7

**Office Action Summary**

Application No.

10/067,431

Applicant(s)

ALLEN, JEFFREY PETER

Examiner

Dah-Wei D. Yuan

Art Unit

1745

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other:

**FUEL CELL CURRENT COLLECTOR**

Examiner: Yuan      S.N. 10/067,431      Art Unit: 1745      October 16, 2003

***Election/Restrictions***

1. Applicant's election of Group III, claims 29-38, in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 29,34 are rejected under 35 U.S.C. 102(e) as being anticipated by Bregoli (US 4,548,876).

Bregoli teaches a fuel cell comprising a cathode (24), a plurality of cathode current collectors (16A,16B,16C,16D), an anode (28), a plurality of anode current collectors (30) (similar corrugated metallic collector as 16 A-D), a separator (12) contacting the plurality of cathode current collectors and anode current collectors. See Figure 1; Column 3, Line 49 to Column 4, Line 11.

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4. Claims 29,32-34,37,38 are rejected under 35 U.S.C. 102(a) as being anticipated by Jaffrey (WO 99/13522).

With respect to claims 29,34, Jaffrey teaches a fuel cell assembly comprising a cathode (18), a layer of expanded metal mesh current collector (136), an anode (16), a layer of expanded metal mesh current collector (144), and a separator (22,122) contacting both current collectors (136,144). The expanded metal mesh current collector is considered as a netting or weaving of metallic wires. See Figures 2 and 4; Pages 10 and 11.

With respect to claim 32,33,37,38, the separator (22) comprises ribs, which form flow paths for lateral fluid communication. See Figures 2 and 4.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 32,33,37,38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bregoli (US 4,548,876) as applied to claims 29,34 above, and further in view of McElroy (US 4,855,193).

Bregoli discloses a fuel cell subassembly as described above in Paragraph 3. However, Bregoli does not teach the separator having ribs which form flow fields. McElroy teaches a fuel

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cell subassembly comprising bipolar separators (16,18), which are formed to define flow fields (12,20) for oxidant and the fuel, respectively. See Figure 3. The use of such ribbed separator can reduce the internal resistance of the cell and increase the cell efficiency of the fuel cell system. See Column 2, Lines 40-54. Therefore, it would have been obvious to one of ordinary skill in the art to use separator having ribs for lateral fluid communication on the fuel cell subassembly of Bregoli, because McElroy teaches the use of aforementioned separators to improve the performance of the fuel cell system.

7. Claims 30,31,35,36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffrey (WO 99/13522).

The disclosure of Jaffrey differs from Applicant's claims in that Jeffrey does not describe the wire current collector having planar surface contactable with the separator. It is the position of the examiner that the contact area between the wire and separator can be modified depending on the design and efficiency of the fuel cell. Therefore, it would have been obvious to one of ordinary skill in the art to use the expanded metal mesh having flat contact area in the fuel cell subassembly depending on the performance requirements of the fuel cell.

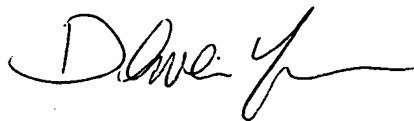
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (703) 308-0766. The examiner can normally be reached on Monday-Friday (8:00-5:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Dah-Wei D. Yuan  
October 16, 2003

A handwritten signature in cursive script, appearing to read "Dave Y", with a long horizontal flourish extending to the right.